ecology and environment, inc.
REDFIELD OFFICE BUILDING, 2ND FLOOR, 295 PIERSON AVENUE, EDISON, NEW JERSEY 08817, TEL. 201-494-5871

International Specialists in the Environmental Sciences

Rcd 4/10/80

DATE: March 28, 1980

TO: Fred N. Rubel, Chief
ER & HMI Branch, USEPA

FROM: John R. Burger
TAT II, E & E

SUBJECT: SPCC Follow-up: State of New Jersey Lands in the Vicinity of Diamond Head Oil and Refining Corp., Kearny, N.J.

Summary of Inspection

A site inspection of the subject drainage facilities was conducted with the NJDOT Resident Engineer, Mr. Al Steinberg, on 19 March, 1980. This inspection followed within 24-36 hours of heavy precipitation in the area, and swale water elevations were at elevation 4.0 ± (USGS Datum). Mr. Steinberg reported this elevation was as high as he had observed since the swales were excavated.

As the accompanying photos indicate, the conditions in the "north swale" (at the point where it will be re-routed under I-280 to the south side of the highway) were very good. No free-floating oil, oily slick, or sheen could be seen along the shoreline or on the water's surface. (The Polaroid photos that appear to show a sheen are actually reflections of the sky on the surface of ripples.) The area was examined at close range and no evidence of prior oil contamination in muds at the swale's edge was observed. Considering the proximity of this swale to the closed landfill to the north and its origin at Diamond Head Oil and Refining Corp., the absence of any visible oil is noteworthy.

> Note: During a separate inspection of the headwaters of the "north swale", adjacent to DHO&R, a few, isolated droplets of coalesced oil were observed to break at the surface and disperse in rainbow rings. However, the total amount of oil in this reach could have been measured in drops, @ 10 drops/ml, at a rate of one drop per five minutes of observation.

In contrast to the north side, the "south swale" has been excavated through landfill debris and cover placement is not yet complete. The "south swale" liquid represented a

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combination of leachate and surface runoff. Whether the artesian discharge observed (see photo 9) is leachate or "uncontaminated" groundwater is unknown. However, patches of rainbow sheen were visible throughout the reach.

The state's efforts to keep debris from washing into Frank Creek have been reasonably effective. The major quantities of (apparent) oil present in the south swale had no visible impact on the creek (see photo 1). Killifish were visible and active at the discharge of the swale into Frank Creek.

Status of State Remediation

As reported in the telephone log, the NJDOT and the NJDEP are coordinating efforts to develop an effective oil retention and recovery system. This system is presently in the design stage, and any construction will be incorporated with additional highway work. Design features are to be based on consolidation of discharges to Frank Creek, staged treatment, and capacity to handle both present conditions and permanent structures capable of meeting future developments. The overall, anticipated approach is as follows:

(1) Re-route the north side swale under I-280, via a 36"ØRCP storm sewer, to a confluence with the south side swale.

(2) Discharge the combined flows through an inverted syphon to Frank Creek.

(3) Observe and monitor the effectiveness of the syphon system and evaluate alternative oil-recovery needs, contingent upon collected oil volumes.

(4) Provide additional treatment, as required (based on (3) above) to meet effluent discharge requirements for total oil and grease.

Although no specific oil-separation has been provided to date at the site, the evidence beginning to develop suggests that the oil pollution potential from the state's discharge to Frank Creek has been significantly reduced since the initial swale excavations.

In addition to the telephone log (enclosure 1), attached are both 35 mm and SX-70 photos (enclosure 3), an index to these photos (enclosure 2), a site location map (enclosure 4), and an overall site plan (enclosure 5). Should any questions arise, please call.

3/17/80 Telephone Log - NJDOT Property - Kearny, I-280 Oil Seepage

Time (hours)

1345 - Called Al Steinberg re: inspection of state remediation efforts. Al reported that all questions on status of activity must go through Tom Germine, (609) 292-5957, Deputy Attorney General. Presently, Ted Fisher, (609) 292-8424, in DOT Design, is working up design of an inverted syphon and collection system. As planned, 2 swale systems will be consolidated and combined discharge will be contained by syphon so that no surface oil will be discharged. I asked Al for ownership information of the "pond" between the R.R. tracks west and north of I-280. He reported that their highway construction maps showed the property belonging to the Erie-Lackawana R.R. Trustees, Cleveland, Ohio, 44115. I set up tentative inspection of site with Al for Tuesday, contingent upon weather

3/18/80

A.M. - Called Tom Germine, Deputy Attorney General, N.J. Discussed proposed state treatment plan. DOT is working with John Vernam (Office of Hazardous Substances - DEP) and John is co-ordinating with Water Resources for approval. As planned, swales will be consolidated and an inverted syphon will be installed. Some sampling was done, but it was "inconclusive" and it is not definite that the syphon will meet the 10/15 mg/l effluent limitations. However, as a first phase the syphon will be installed (upstream of the tide gates). Tom suggested calling John Vernam for further information on design.

A.M. - Called Al Steinberg, re-scheduled inspection for 3/18 A.M.

Enclosure 1

I-280, Kearny, New Jersey - Drainage Swales

INDEX TO PHOTOGRAPHS

1 Panorama of "south side" swales, looking S.W. to N.E. Proposed storm sewer crossing will probably be located in vicinity of debris fence. Tide gates are visible above B & O R.R. pipe transport car. No rainbow sheen was observed at the outfall of the swale where it enters the creek (foreground). The "north side" swale is visible in the upper left-hand corner. Note match lines. (35 mm)

2 Panorama of "north side" swale looking N.W. to West. The monitoring well in for foreground is for the closed landfill north of the interstate. Hay bales for sediment and oil-control are visible west of the swale terminus. No oil sheen was observed anywhere at this location. (35 mm)

3 View looking west of incomplete I-280, where 36"Ø RCP storm sewer will be located. (SX-70)

4 Close-ups of water's surface and monitoring well, "north swale" - no oily sheen observed. (SX-70 & 35 mm)

5 View of "north swale" looking N.E. (downwind). Note Diamond Head Oil and Refining Corp. visible in upper left-hand corner. (SX-70 and 35 mm)

6 View of "south swale" looking east. Debris fences and exposed landfill waste are visible/ (35 mm)

7 View of "south swales" water's surface and debris fences looking S.W. Only isolated rainbow sheen patches were observed. None are visible in these photos. (35 mm and SX-70)

8 View of "south swale" looking east, note exposed landfill debris. (SX-70)

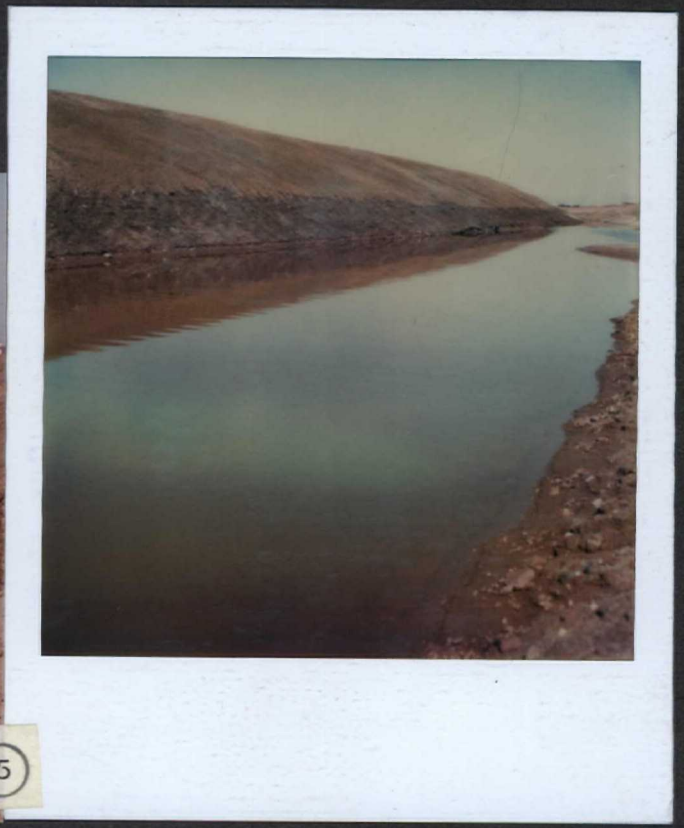
9 Close-up of swale bank and water's surface, "south swale." Note artesian flow in center of photographs, and patches of ranbow sheen. Water discharged from well had no visible oil. (35 mm and SX-70).


MATCH LINE
1


2

3

4



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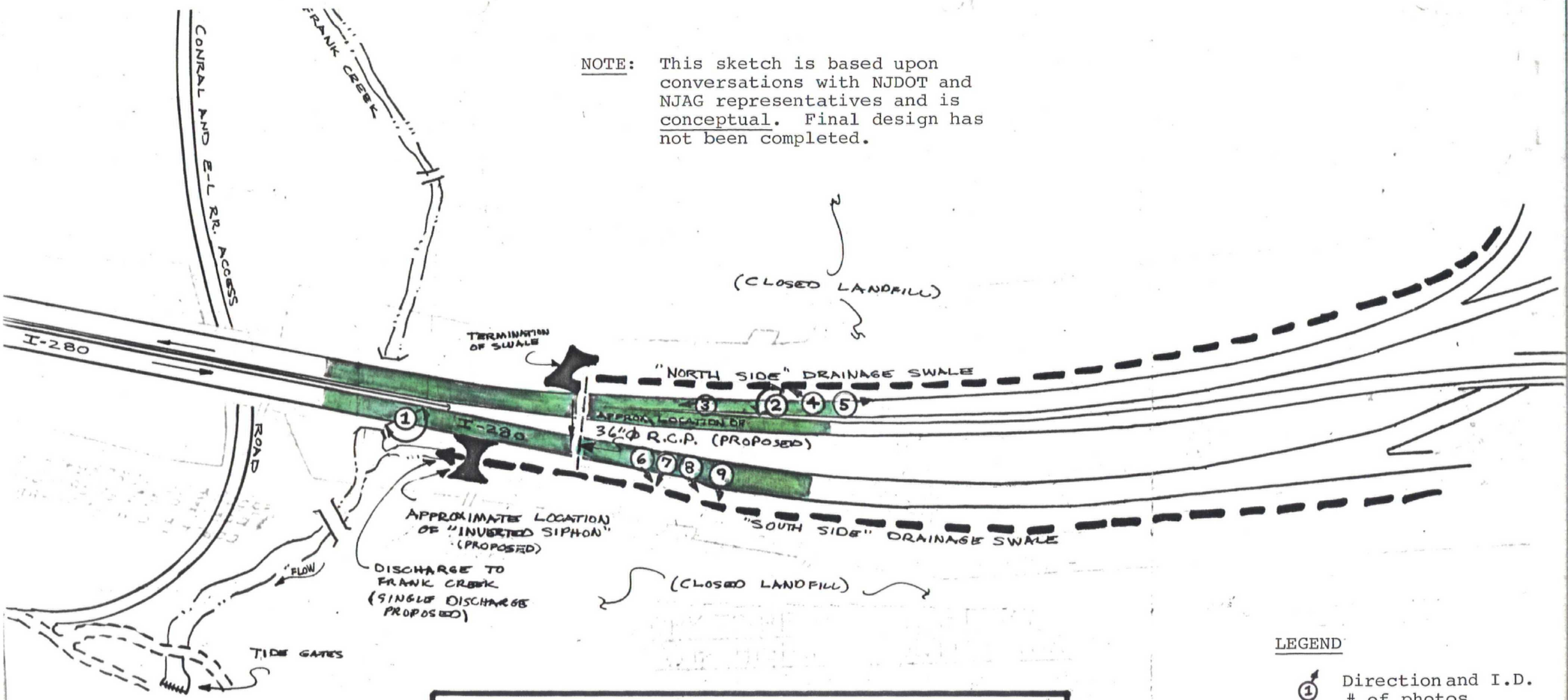
NOTE: This sketch is based upon conversations with NJDOT and NJAG representatives and is conceptual. Final design has not been completed.



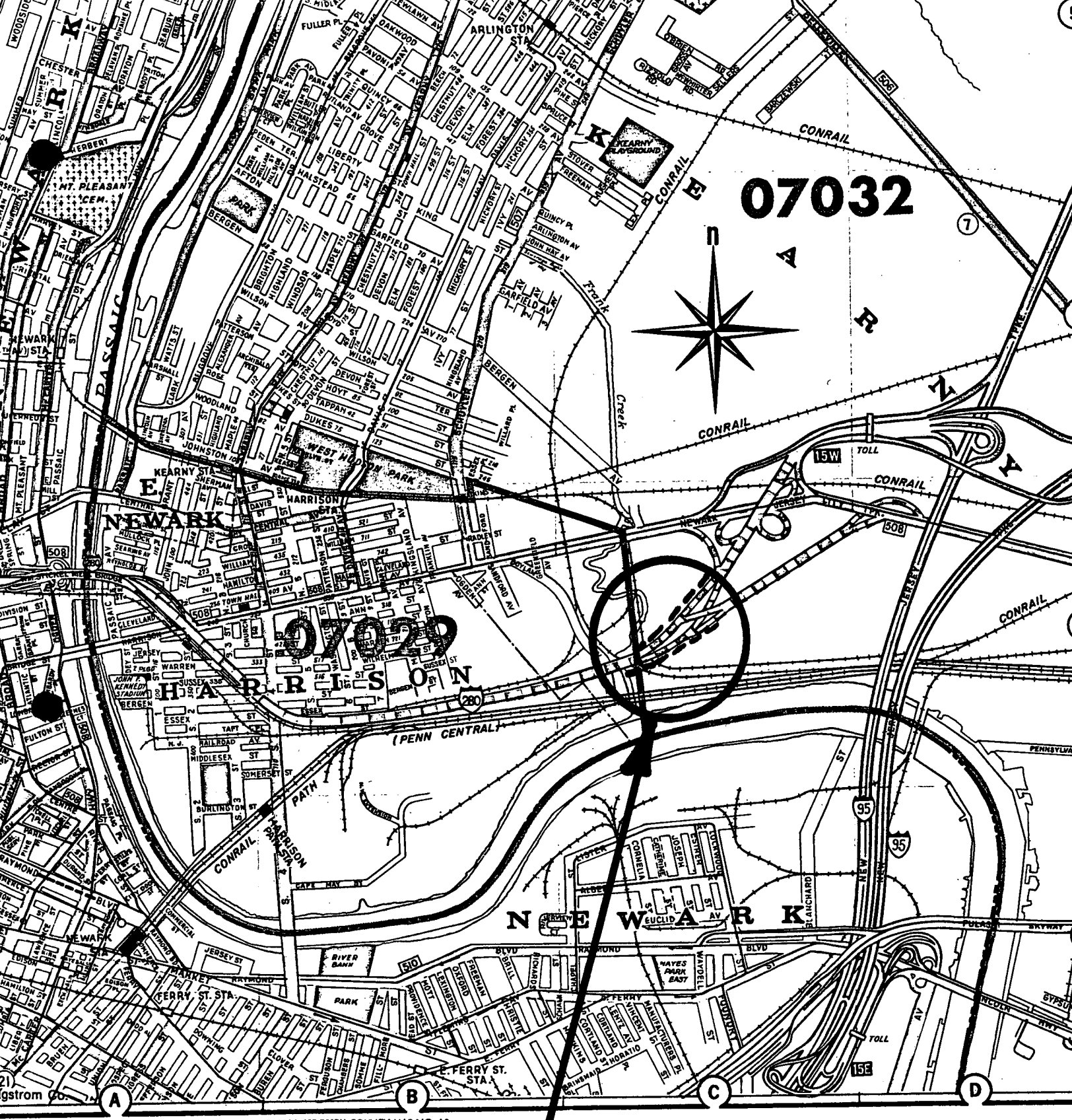
OVERALL SITE PLAN

Area of Proposed Drainage Swale Consolidation
I-280 to Frank Creek
Kearny, N.J.

LEGEND

- ① Direction and I.D. # of photos
- Drainage Swales (existing)
- 36"Ø R.C.P. storm sewer (proposed)
- Interstate 280 pavement (existing)
- Interstate 280 pavement (proposed)

Enclosure 5



SITE LOCATION

Area of Proposed Drainage Swale
Consolidation
I-280 to Frank Creek
Kearny, New Jersey

Enclosure 4